Amplifying Real Estate Value through Energy & Water Management: From ESCO to "Energy Services Partner"

2004 ACEEE Summer Study on Energy Efficiency in Buildings

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Motivation

- Two Sources of Market Inertia:
  - Most income-property owners and investors do not see sufficient “value” in energy efficiency (the choice of metric is key)
  - The current state of the art in innovative finance (e.g. ESCOs) has had limited success
- Can a new “value proposition” constructively reconcile these two issues?

Relating energy & real estate

Net Operating Income (NOI)
= Gross Income – Expenses

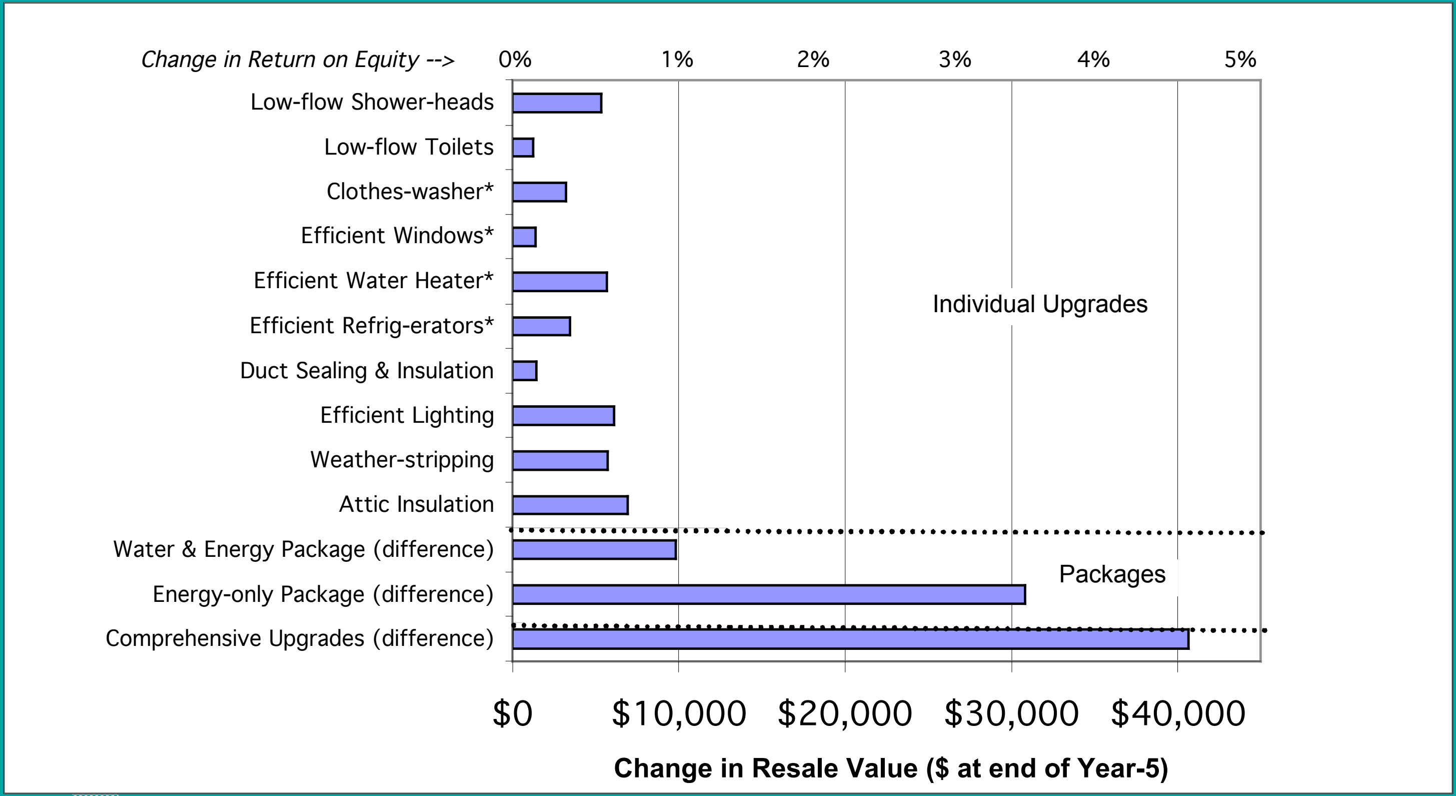
(utilities are major *controllable* expenses)

Property Value
= NOI ÷ Capitalization Rate (CAP Rate)

Return on Equity (ROE)
= (NOI – Debt Service) ÷ Investment

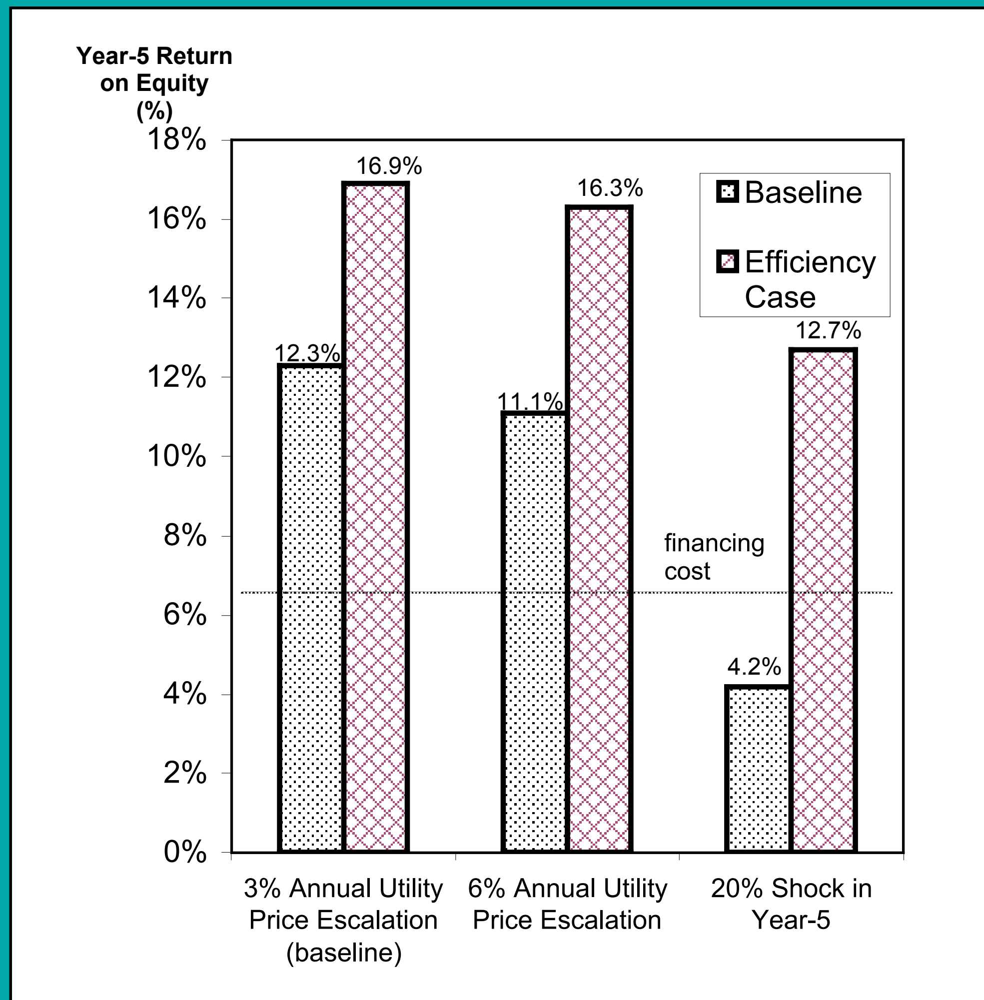
Metrics with meaning

Small Apartment Building



Undiscounted 5-year energy savings = $15,000, vs $40,000 increase in sales value

Energy price-shock hedging benefit of efficiency



Structuring finance to include an "Energy Services Partner"

5-year undiscounted energy savings $900k, versus $2.4 million increase in value at time of sale

Office Building	Energy Savings	OVERALL PROJECT	General Partner	Limited Partners	Energy Services Partner
BASELINE	**0%**				
Cash in		$14,194,688	$2,838,938	$11,355,750	$0
Share of Equity			20%	80%	0%
Cash Flow Before Taxes (year-5)		$1,358,390	$271,678	$1,086,712	$0
Return on Equity (year-5)		9.6%	9.6%	9.6%	
Sale Price in Year 6 (at 8-CAP)		$57,976,406			
Return of Capital and Gain Distribution		$16,025,661	$3,205,132	$12,820,529	$0
WITH ENERGY SERVICES PARTNER	**25%**				
Cash in		$14,667,188	$2,838,938	$11,355,750	$472,500
Share of Equity			19%	77%	3%
Cash Flow Before Taxes (year-5)		$1,541,286	$298,327	$1,193,307	$49,652
Return on Equity (year-5)		10.5%	10.5%	10.5%	10.5%
Sale Price in Year 6 (at 8-CAP)		$60,354,232			
Return of Capital and Gain Distribution		$18,260,817	$3,534,510	$14,138,040	$588,268
DIFFERENCE with Energy Services Partner Compared to Baseline					
Cash in		$472,500	$0	$0	$472,500
Cash Flow Before Taxes (year-5)		$182,897			
Return on Equity (year-5)		0.9%	0.9%	0.9%	
Sale Price in Year 6 (at 8-CAP)		$2,377,826			
as % of initial investment		16%			
Return of Capital and Gain Distribution		$2,235,156	$329,378	$1,317,511	$588,268
as % of basecase distribution		14%	10%	10%	

Scenario based on a hypothetical property with 315,000 square feet, $175/sf purchase price ($55 million), energy costs of $2 per square foot, a 3-year payback time on the energy-efficiency upgrade costs required to obtain 25% savings.

Benefits to Investors

- Energy Services Partner (ESCO)
  - Gives asset-poor ESCOs a basis for their book value and counterweight to liabilities from guaranteed savings
  - Addresses (mis)perceptions of disinterest in savings persistence, cream skimming
  - Lower cost of (asset-secured) financing
- Other Partners
  - Higher-quality due-diligence before purchase; portfolio management after
  - Increased cash-flow; increased return on investment

Key factors

- Applicable building stock / portfolio
- Measurability of savings
- Uncertainty and skepticism about the stability/persistence of additional cash flows that can be anticipated as a result of capital investment aimed at improving efficiency
- Property management companies
- Property appraisal process

Appraisal must reflect benefits

5-year undiscounted energy savings = $55,000, versus $125,000 increase in appraised value

Hotel

	Prior to Upgrade	After Upgrade	Difference
Income			
Gross Scheduled Income ($/year)	506,624	506,624	0
Vacancy Rate (35%) ($/year)	177,318	177,318	0
Net Scheduled Income ($/year)	329,306	329,306	0
Expenses			
Electricity ($/year)	18,766	10,450	-8,316
Natural Gas ($/year)	5,447	2,850	-2,597
Other ($/year)	177,171	177,171	
Total Expenses ($/year)	201,384	190,471	-10,913
Net Operating Income (NOI) ($/year)	127,921	138,834	10,913
Appraiser's Opinion of Value (8.75% CAP rate) ($)	1,461,959	1,586,679	124,720
Increase in value due to energy upgrades ($)		124,720	

Adapted from Chao and Parker (2000)

Conclusions

- Energy efficiency has more value to real estate investors than suggested by the language of “engineering-economics”
- ESCOs and other third-party finance could be more successful if they became integral partners in the real estate investment, rather than operating as outsiders